

REMARKS

I. Introduction

With the cancellation of claims 6, 7, and 9, without prejudice herein, claims 5 and 8 are pending in the present application. In view of the preceding amendments and following remarks, it is respectfully submitted claims 5 and 8 are allowable, and reconsideration is respectfully requested.

II. Rejection of Claims 5, 6 and 9 Under 35 U.S.C. §102(b)

Claims 5, 6 and 9 were rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent 6,470,958 ("Solvi et al."). Applicant respectfully submits that the Solvi et al. reference does not render obvious claims 5, 6 and 9 for the following reasons.

The Office Action alleges that Solvi et al. teach a method of manufacturing high-quality cooling plates by forming a continuously cast copper ingot perform, forming cooling channels in the perform by casting, and then subsequently cold rolling the perform to the final thickness, thereby forming coolant channels with oval cross sections due to the deformation during the rolling step.

Claim 5 relates to a method for manufacturing a cooling plate having a plate member. Claim 5 recites the steps of initially providing a raw ingot made of a copper material and the raw ingot having a starting thickness greater than a final thickness of the plate member, reducing the starting thickness of the raw ingot to the final thickness of the plate member, using at least one forming step, and producing coolant channels in one of the raw ingot and the plate member prior to attaining the final thickness. Claim 5 has been amended without prejudice herein, to recite that the step of reducing the starting thickness of a raw ingot is accomplished by cold rolling; the step of producing channels having circular cross-sections is subsequent to the rolling, the channels having a circular cross-section; and the step of reducing continues to reduce the ingot to the final thickness of the plate member, while the channels are deformed into coolant channels having oval cross-sections. Support for the amendment to claim 5 may be found, for example, in original claim 7.

Solvi et al. allegedly describe a method of producing a cooling plate for iron and steel-making furnaces. Title. Solvi et al. allegedly produce a cooling plate through the use of a continuous casting mould 10. Col. 3, lines 40 to 48. The continuous casting mould 10 has three rod-shaped inserts 28 projecting into the casting duct 20. Col. 3, lines 50 to 53. The inserts have preformed paths in which coolant may travel. Fig. 1. After formation of the preform shape, the thickness of the preform is reduced in thickness by rolling the preform to a thickness of the finished cooling plate. Col. 4, lines 26 to 29. As a result, the Solvi et al. reference specifically provides for forming a preform with the rod-shaped inserts 28 **first** which is subsequently followed by rolling of the perform to a final thickness. As a result, the Solvi et al. reference does not disclose or suggest the step of producing channels having circular cross-sections **subsequent** to rolling. Solvi et al. always produce a cooling plate by first inserting three rod-shaped inserts 28 into mould, thereby forming the cooling plate with ducts 20 **prior** to rolling.

To anticipate a claim, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Col. of Calif., 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). That is, the prior art must describe the elements arranged as required by the claims. In re Bond, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As more fully set forth above, it is respectfully submitted that the Solvi et al. reference does not disclose or suggest all of the limitations of amended claim 5, namely that the step of reducing the starting thickness of a raw ingot is accomplished by cold rolling; the step of producing channels having circular cross-sections is subsequent to the rolling, the channels having a circular cross-section; and the step of reducing continues to reduce the ingot to the final thickness of the plate member, while the channels are deformed into coolant channels having oval cross-sections.

Additionally, to reject a claim under 35 U.S.C. § 102, the Examiner must demonstrate that each and every claim limitation is contained in a single prior art reference. See, Scripps Clinic & Research Foundation v. Genentech,

Inc., 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991). Still further, not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention, namely the inventions of the rejected claims, as discussed above. See, Akzo, N.V. v. U.S.I.T.C., 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986). In particular, it is respectfully submitted that, at least as for the reasons discussed above, the reference relied upon would not enable a person having ordinary skill in the art to practice the invention of the rejected claims, as discussed above. Also, to the extent that the Examiner is relying on the doctrine of inherency, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flows from the teachings of the applied art.: See M.P.E.P. § 2112; emphasis in original; and see, Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). Thus, the M.P.E.P. and case law make clear that simply because a certain result or characteristic may occur in the prior art does not establish the inherency of that result or characteristic. Accordingly, the anticipation rejection as to the rejected claims must necessarily fail for the foregoing reasons.

Claims 6 and 9 have been cancelled, therefore rendering these rejections moot. Applicant respectfully requests withdrawal of the rejection to claim 5.

III. Rejection of Claims 5 to 8 Under 35 U.S.C. §103(a)

Claims 5 to 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent 5,678,806 (“Hille et al.”) in view of Solvi et al. Applicant respectfully submits that the combination of Hille et al. and Solvi et al. does not render obvious claims 5 to 8 for the following reasons.

The addition of the Hille et al. reference does not cure the defects of the Solvi et al. reference. The Hille et al. reference allegedly relates to plate coolers for shaft furnaces. Title. The Hille et al. reference does not disclose or suggest the step of producing channels having circular cross-sections **subsequent** to rolling. The Hille et al. reference is silent with regards to producing any type of channels subsequent to rolling. The Hille et al.

reference, in fact, is silent with regards to rolling of any pieces. The Hille et al. reference merely provides a configuration for plate coolers and does not explicitly describe how these plate coolers are made.

The Hille et al. reference, as best understood from the limited disclosure, is presumably similar to DE 29 07 511. Col. 1, lines 33 to 43. The Hille et al. reference, differs from DE 29 07 511 in configuration only by **eliminating a vertical gap** in the plate cooler, which must be filled with refractory material. Col. 2, lines 4 to 10. The Solvi et al. reference, however, describes the same DE 29 07 511 and states that production costs of these cooling plates is high and that drilling is particularly complicated, time-consuming and expensive. Solvi et al. actually teach away from any combination with a reference with a design similar to DE 29 07 511 (i.e. the Hille et al. reference) so therefore a person of skill in the art would not have made the combination of Solvi et al. and Hille et al. As a result, the combination of references fails to disclose or suggest the step of producing channels having circular cross-sections **subsequent** to rolling and the references themselves teach away from any combination as proposed in the Office Action.

In rejecting a claim under 35 U.S.C. §103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. Second, there must be a reasonable expectation of success. In re Merck & Co., Inc., 800 F.2d 1091, 23 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art references must teach or suggest all of the claim of limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As indicated above, the references singularly and in combination fail to disclose or suggest the step of producing channels having circular cross-sections **subsequent** to rolling. Moreover, the references themselves teach away from such a combination of references.

It is respectfully submitted that the cases of In re Fine, supra, and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a 35 U.S.C. §103 rejection. It is respectfully submitted that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the reference relied upon. In particular, the Court in the case of In re Fine stated that:

The PTO has the burden under §103 to establish a prima facie case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done....

Instead, the examiner relies on hindsight in reaching his obviousness determination.... One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art preferences in order to establish a prima facie obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art....

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if they'd be called evidence) that one of ordinary skill... would have been motivated to make the modifications...necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944(citations omitted; italics in original).

This is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction, and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met there by. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a "technologically simple concept"--which is not the case here--there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person having no knowledge of the claim subject matter to "make the combination in the matter claimed," stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the matter claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims... under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000). Again, it is believed that there have been no such findings.

In view of the foregoing, it is respectfully submitted that the combination of Solvi et al. and Hille et al. does not render obvious claim 5. Claims 6 and 7 have been cancelled without prejudice rendering the rejection

for this claim moot. Claim 8 depends from amended claim 5 and therefore include all of the features of amended claim 5. Claim 8 should be patentable for at least the reasons presented above in relation to amended claim 5.

IV. Conclusion

It is therefore respectfully submitted that the pending claims are allowable. All issues raised by the Examiner have been addressed, and an early and favorable action on the merits is solicited.

Respectfully submitted,

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